Electronic Version

Stylesheet Version v1.1.1

Consuming Web Services on Demand

Abstract

A method, system, and computer program product of consuming Web Services on demand, the present invention takes WSDL as the initial input; spontaneously and concurrently invokes Web Services with transparent code generations and dynamic configurations; processes the invocation result and charges end users with pay-as-you-go and prepaid finance schedules.

Fig. 1

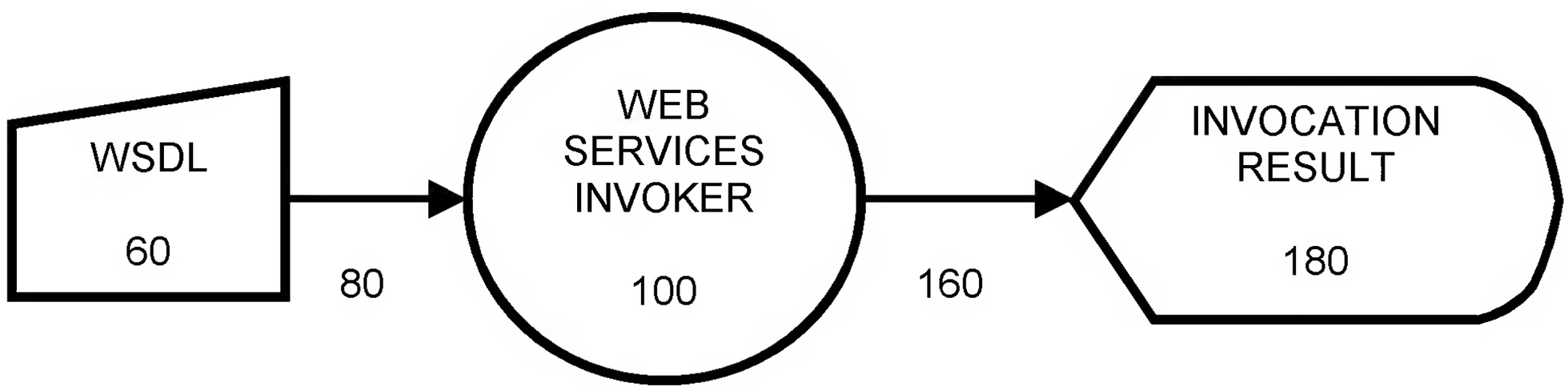

WSDL
60
80
WEB
SERVICES
INVOKER
100
160
INVOCATION
RESULT
180

Fig. 2

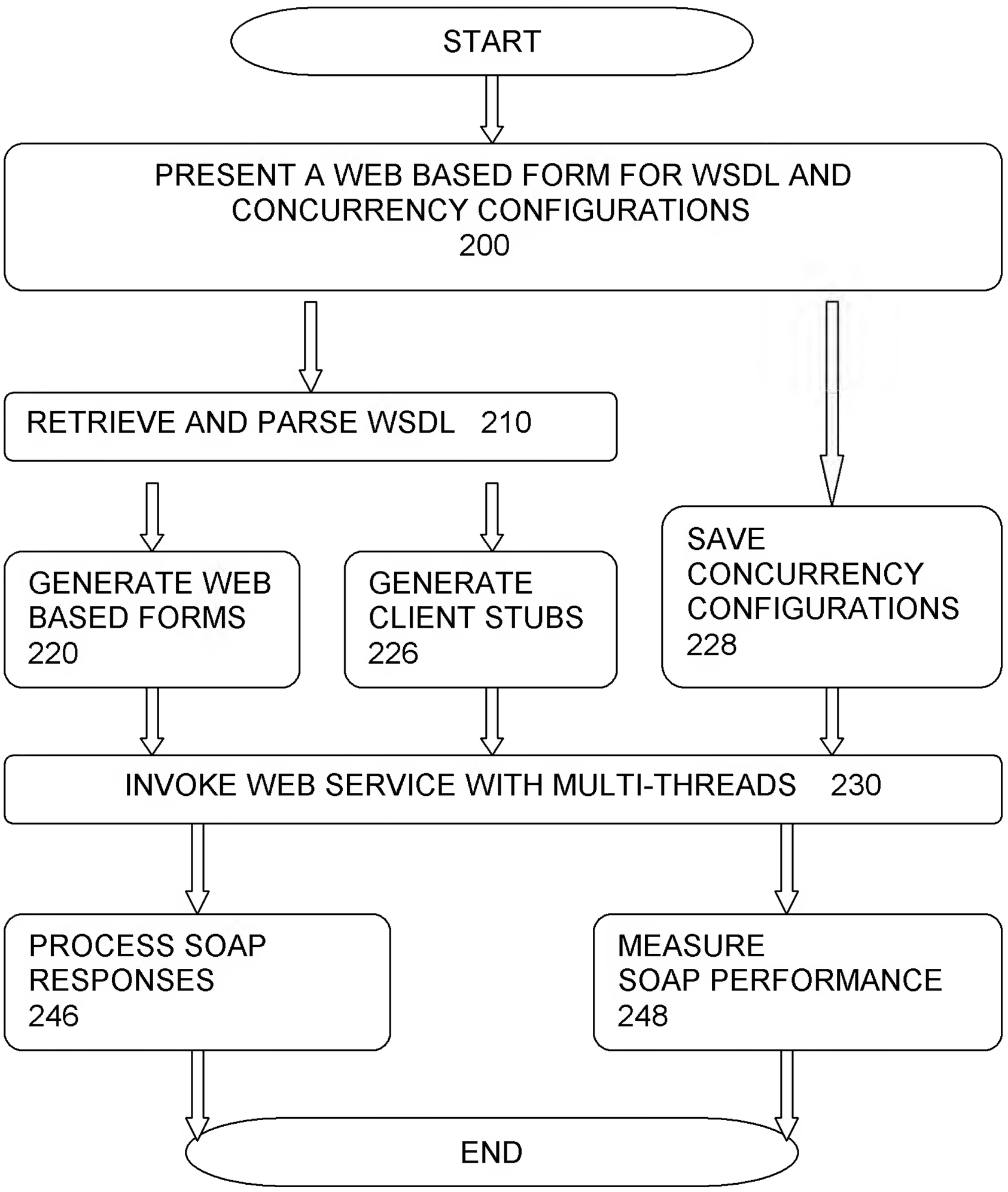

START
PRESENT A WEB BASED FORM FOR WSDL AND CONCURRENCY CONFIGURATIONS 200
RETRIEVE AND PARSE WSDL 210
GENERATE WEB BASED FORMS 220
GENERATE CLIENT STUBS 226
SAVE CONCURRENCY CONFIGURATIONS 228
INVOKE WEB SERVICE WITH MULTI-THREADS 230
PROCESS SOAP RESPONSES 246
MEASURE SOAP PERFORMANCE 248
END

Fig. 3

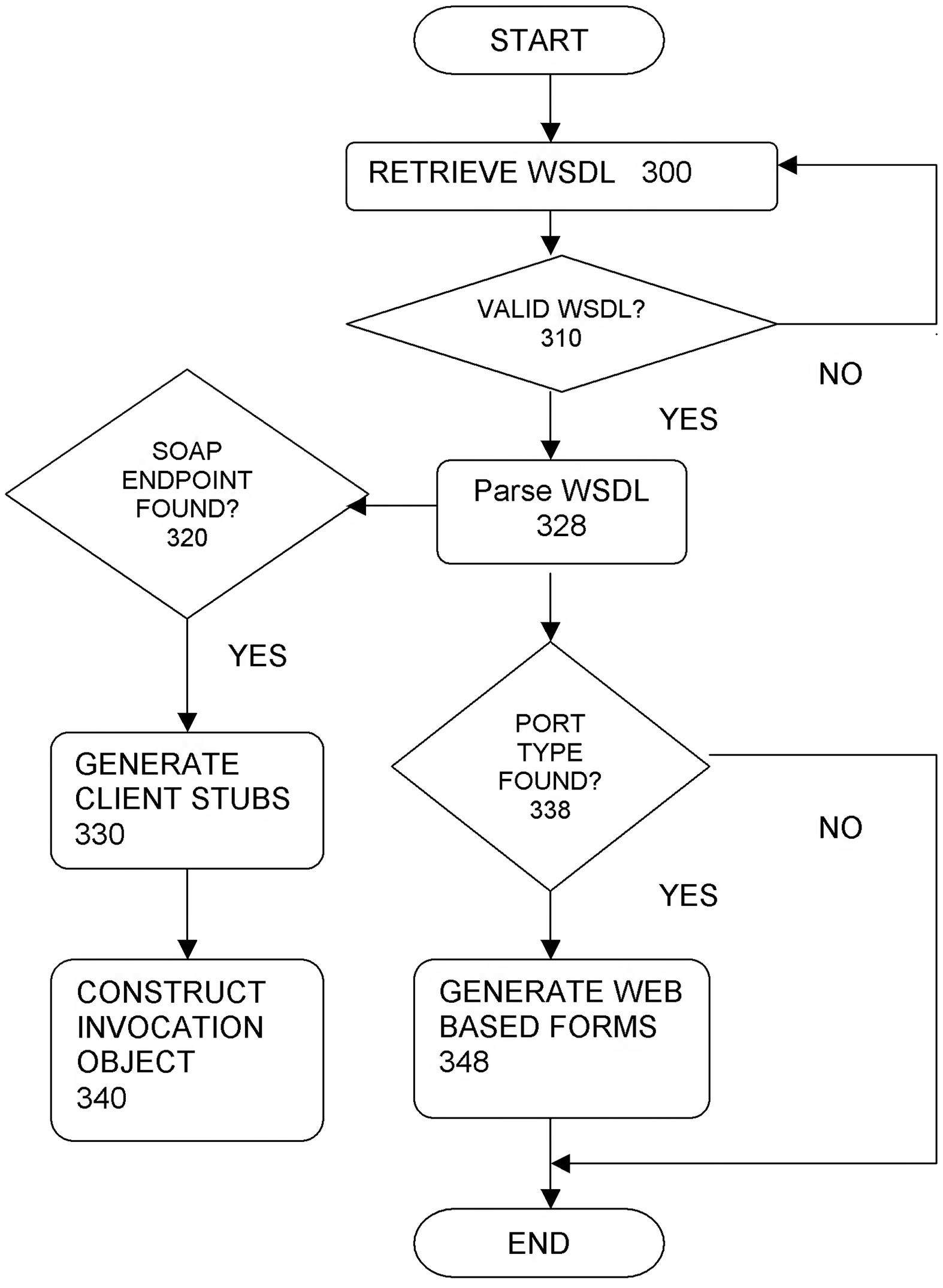

START
RETRIEVE WSDL 300
VALID WSDL? 310
NO
YES
Parse WSDL 328
SOAP ENDPOINT FOUND? 320
YES
GENERATE CLIENT STUBS 330
CONSTRUCT INVOCATION OBJECT 340
PORT TYPE FOUND? 338
NO
YES
GENERATE WEB BASED FORMS 348
END

Fig. 4

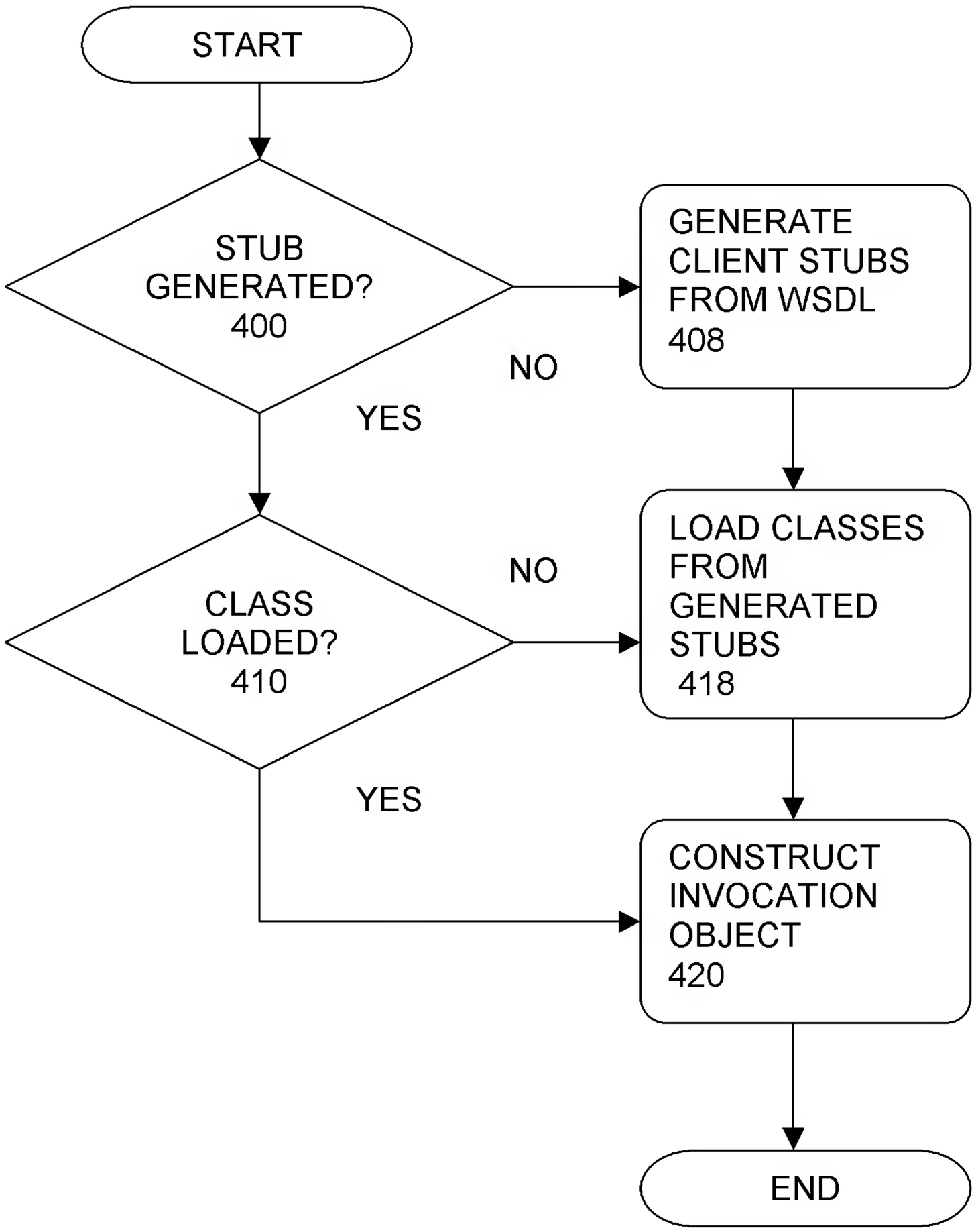

START
STUB GENERATED? 400
NO
YES
GENERATE CLIENT STUBS FROM WSDL 408
CLASS LOADED? 410
NO
YES
LOAD CLASSES FROM GENERATED STUBS 418
CONSTRUCT INVOCATION OBJECT 420
END

Fig. 5

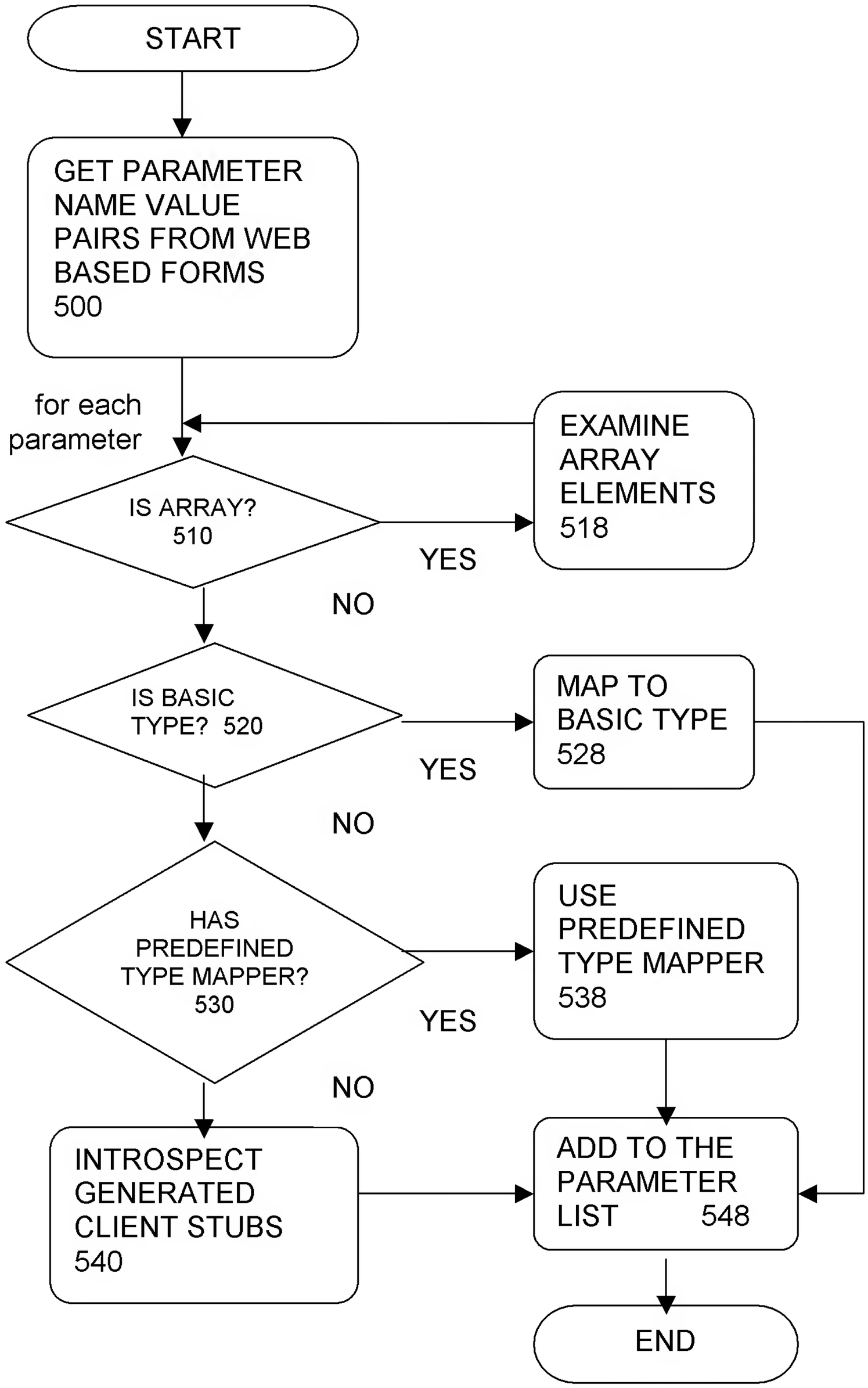

START
GET PARAMETER NAME VALUE PAIRS FROM WEB BASED FORMS 500
for each parameter
IS ARRAY? 510
YES
EXAMINE ARRAY ELEMENTS 518
NO
IS BASIC TYPE? 520
YES
MAP TO BASIC TYPE 528
NO
HAS PREDEFINED TYPE MAPPER? 530
YES
USE PREDEFINED TYPE MAPPER 538
NO
INTROSPECT GENERATED CLIENT STUBS 540
ADD TO THE PARAMETER LIST 548
END

Fig. 6

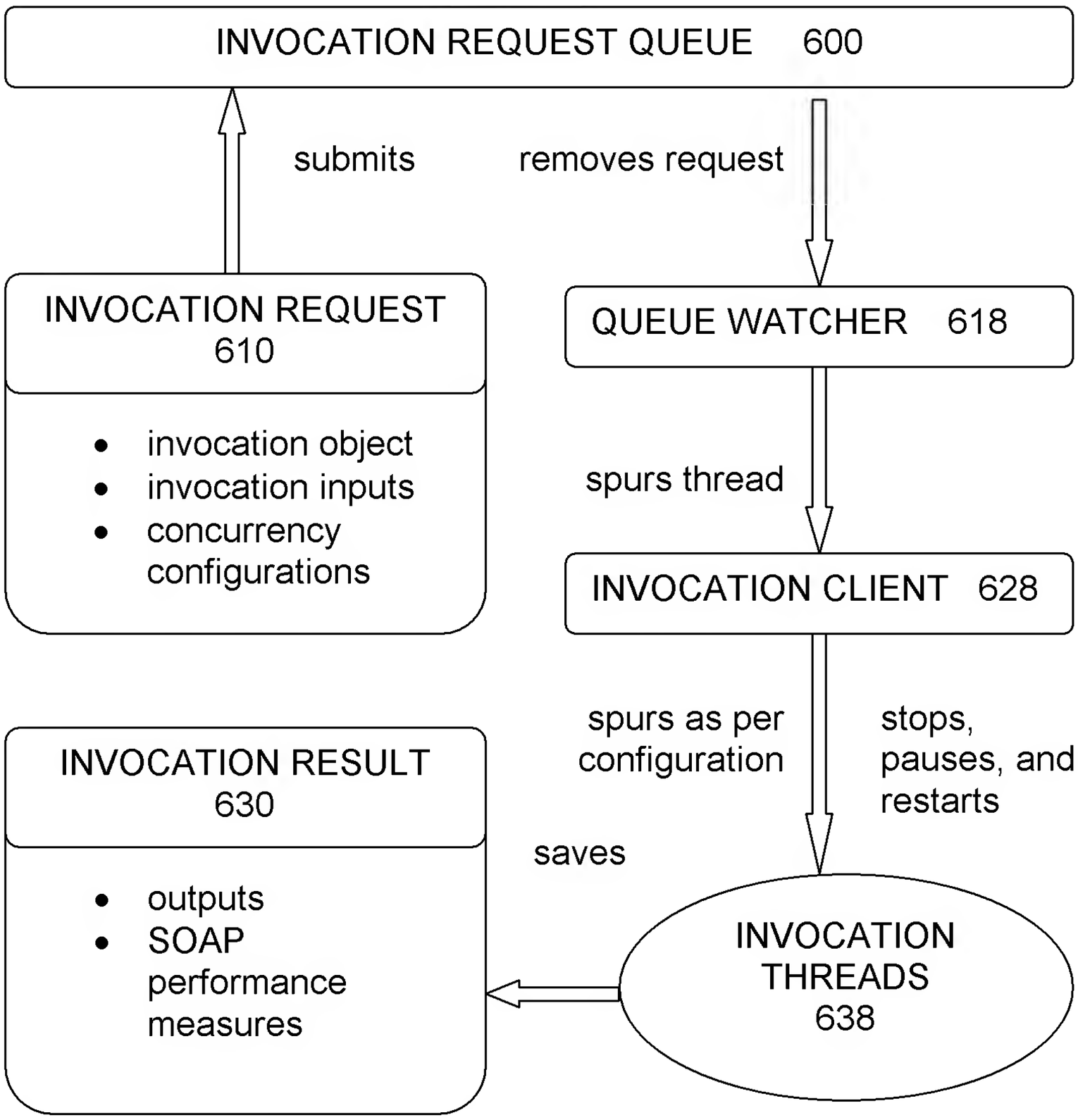

INVOCATION REQUEST QUEUE 600
submits
removes request
INVOCATION REQUEST 610
invocation object
invocation inputs
concurrency configurations
QUEUE WATCHER 618
spurs thread
INVOCATION CLIENT 628
spurs as per configuration
stops, pauses, and restarts
saves
INVOCATION RESULT 630
outputs
SOAP performance measures
INVOCATION THREADS 638

Fig. 7

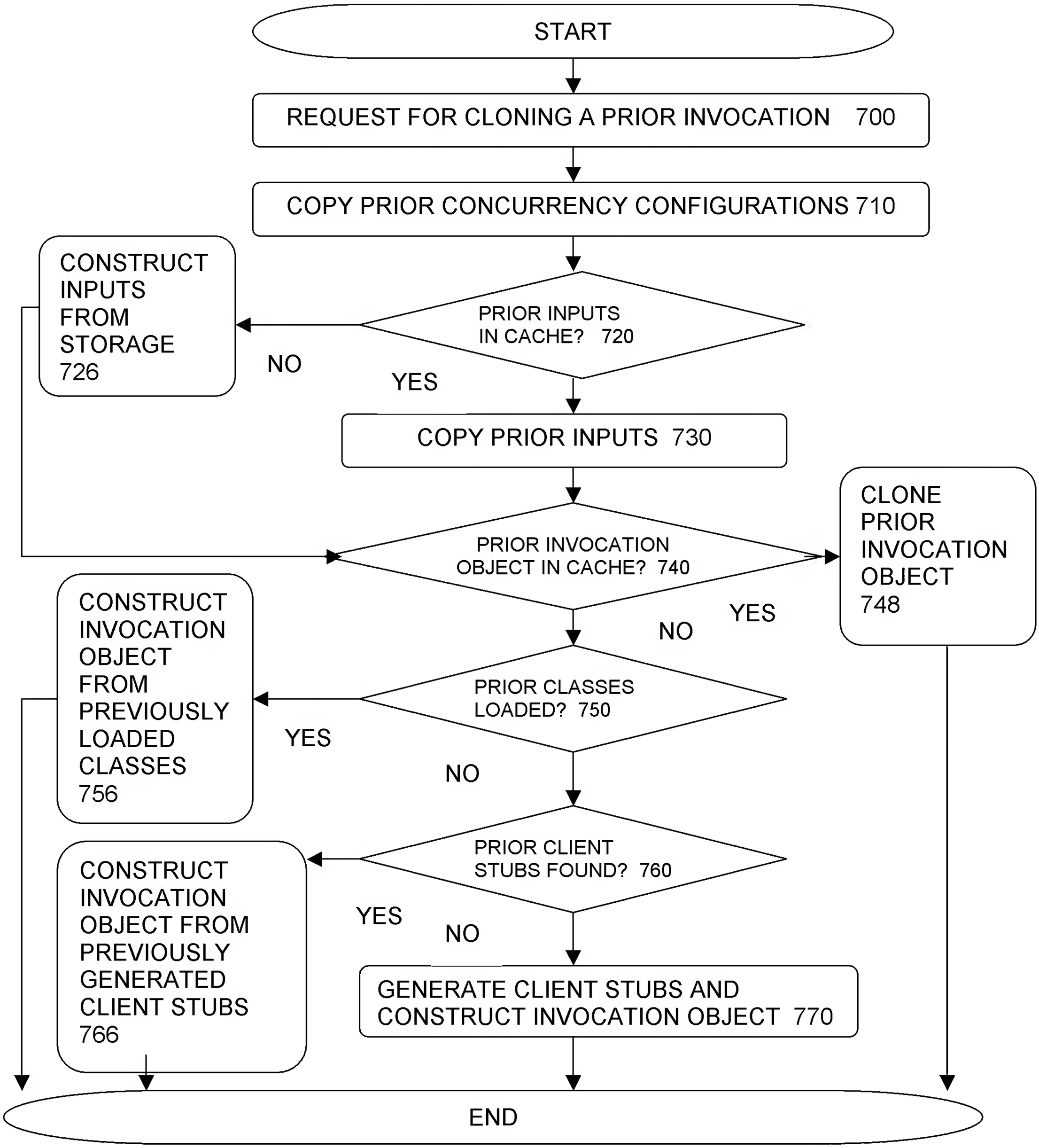
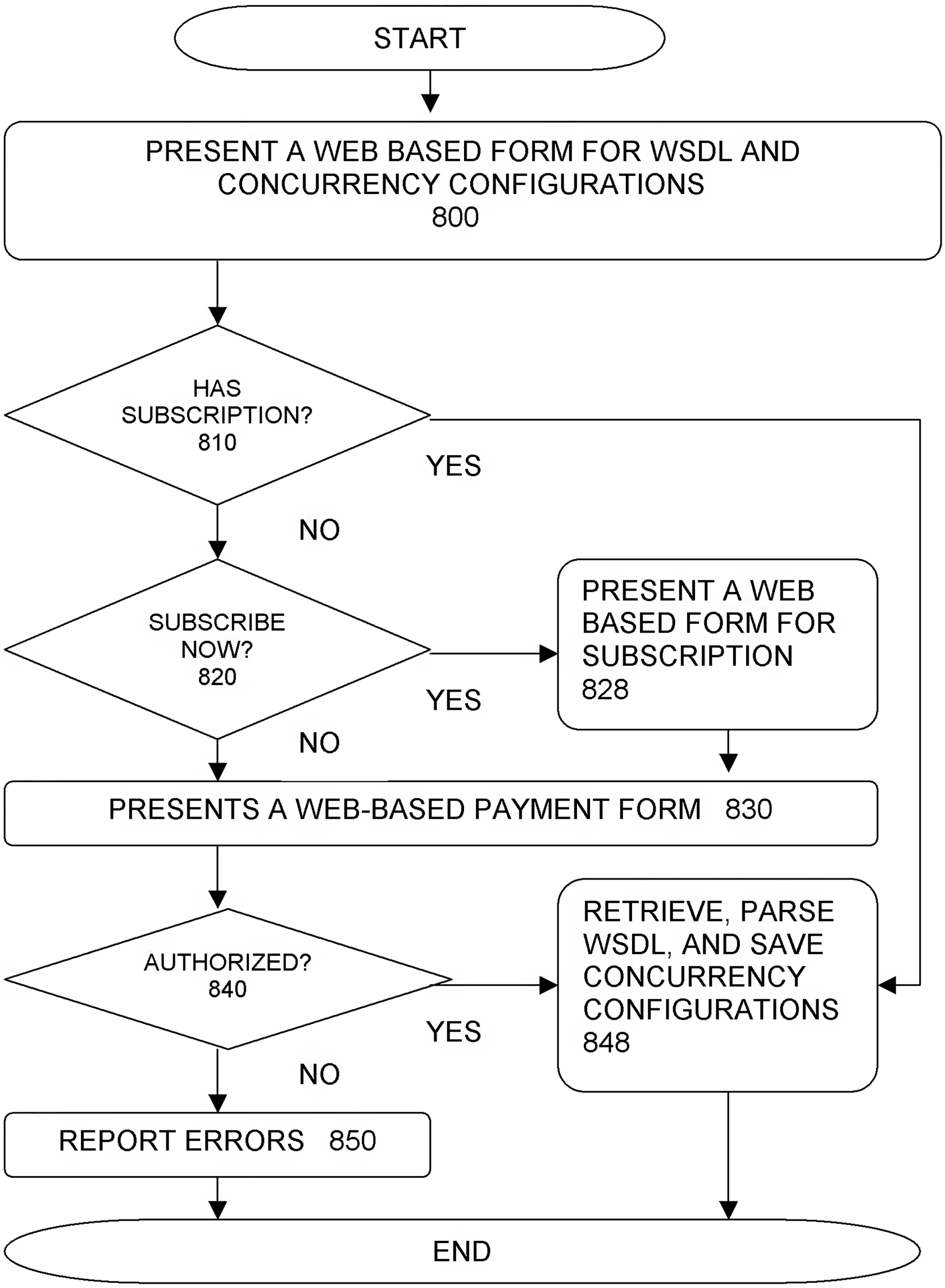

START
REQUEST FOR CLONING A PRIOR INVOCATION 700
COPY PRIOR CONCURRENCY CONFIGURATIONS 710
PRIOR INPUTS IN CACHE? 720
NO
YES
CONSTRUCT INPUTS FROM STORAGE 726
COPY PRIOR INPUTS 730
PRIOR INVOCATION OBJECT IN CACHE? 740
YES
NO
CLONE PRIOR INVOCATION OBJECT 748
PRIOR CLASSES LOADED? 750
YES
NO
CONSTRUCT INVOCATION OBJECT FROM PREVIOUSLY LOADED CLASSES 756
PRIOR CLIENT STUBS FOUND? 760
YES
NO
CONSTRUCT INVOCATION OBJECT FROM PREVIOUSLY GENERATED CLIENT STUBS 766
GENERATE CLIENT STUBS AND CONSTRUCT INVOCATION OBJECT 770
END

Fig. 8


START
PRESENT A WEB BASED FORM FOR WSDL AND CONCURRENCY CONFIGURATIONS 800
HAS SUBSCRIPTION? 810
YES
NO
SUBSCRIBE NOW? 820
PRESENT A WEB BASED FORM FOR SUBSCRIPTION 828
YES
NO
PRESENTS A WEB-BASED PAYMENT FORM 830
AUTHORIZED? 840
RETRIEVE, PARSE WSDL, AND SAVE CONCURRENCY CONFIGURATIONS 848
YES
NO
REPORT ERRORS 850
END